

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/735,608	HATANO, HIROSHI	
	<b>Examiner</b>	<b>Art Unit</b>	
	Kim-Kwok CHU	2653	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment filed on 11/22/04.
2. ☒ The allowed claim(s) is/are 1, 5, 21, 6-9, 13, 22, 14-16 and 18-20 which are renumbered as 1-15 respectively.
3. ☒ The drawings filed on 14 December 2000 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |  |
|---|--|
| <ol style="list-style-type: none"> <li>1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)</li> <li>2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</li> <li>3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br/>Paper No./Mail Date <u>11/22/04</u></li> <li>4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br/>of Biological Material</li> </ol> | <ol style="list-style-type: none"> <li>5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</li> <li>6. <input type="checkbox"/> Interview Summary (PTO-413),<br/>Paper No./Mail Date _____.</li> <li>7. <input type="checkbox"/> Examiner's Amendment/Comment</li> <li>8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance</li> <li>9. <input type="checkbox"/> Other _____.</li> </ol> |
|---|--|

**Allowable Subject Matter**

1. Claims 1, 5-9, 13-16 and 18-22 are allowable over prior art.

2. The following is an Examiner's statement of reasons for the indication of allowable subject matter based on the Amendment filed on November 22, 2004.

As in claims 1 and 9, the prior art fail to teach or fairly suggest a reflection converging optical system having the following feature:

(a) a solid immersion lens essentially made of a light-transmitting medium;

(b) a first reflection surface for reflecting the light that has been emitted from the light source and taken in the reflection converging optical system;

(c) a second reflection surface for further reflecting the light reflected by the first reflection surface and for converging the light onto the boundary/peripheral portion of the solid immersion lens; and

(d) the light emitted from the light source is taken in the first reflection surface sideways with respect to a light-converging axis of the reflection converging optical system

As in claims 6, 14 and 18 the prior art fail to teach or fairly suggest an optical head having the following features:

(a) a reflection converging optical system which includes a solid immersion lens essentially made of a light-transmitting medium, and reflects the light emitted from a light source and taken in the solid immersion lens to converge the light onto a boundary portion of the solid immersion lens;

(b) a first reflection surface and a second reflection surface are formed on the solid immersion lens;

(c) the solid immersion lens comprises a bottom surface and an outer curved surface defining an outer shape thereof, and an inner curved surface that is placed inside the solid immersion lens; and

(d) the light that has been made incident on the solid immersion lens through the incident section is reflected by the first reflection surface placed on the inner curved surface, and further reflected by the second reflection surface placed on the outer curved surface, and then converged on a center area of the bottom surface.

As in claims 7, 15 and 19, the prior art fail to teach or fairly suggest an optical head having the following features:

(a) a reflection converging optical system which includes a solid immersion lens essentially made of a light-transmitting medium, and reflects the light emitted from a light source and taken in the solid immersion lens to converge the light onto a boundary portion of the solid immersion lens;

(b) a first reflection surface and a second reflection surface are formed on the solid immersion lens; and

(c) the solid immersion lens has an upper surface and a bottom surface, the upper surface has an incident section for transmitting incident light onto the solid immersion lens and a reflection section serving as the second reflection surface, the bottom surface has a reflection section serving as the first reflection surface on a peripheral area of the bottom surface, the incident section being placed on a peripheral area on the upper surface so that the light that has been made incident on the solid immersion lens through the incident section is reflected by the first reflection surface placed on the peripheral area of the bottom surface, and further reflected by the second reflection surface placed on a center area of the upper surface, and then converged on a center area of the bottom surface.

The features indicated above, in combination with the other elements of the claims, are not anticipated by, nor made obvious over the prior art of record.

3. Any comments considered necessary by applicant must be submitted no later than the payment of the Issue Fee and, to avoid processing delays, should preferably **accompany** the Issue Fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Yamasaki (6,831,886) is pertinent because Yamasaki teaches an optical head having a horizontal emitted light beam.

Ueyanagi (6,359,852) is pertinent because Ueyanagi teaches an optical head having a horizontal emitted light beam.

5. Any response to this action should be mailed to:

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Or faxed to:

(703) 872-9306 (for formal communications intended for  
entry. Or:

(571) 273-7585, (for informal or draft communications,  
please label "PROPOSED" or "DRAFT")

Any inquiry of a general nature or relating to the status of  
this application should be directed USPTO Contact Center (703)  
308-4357; Electronic Business Center (703) 305-3028.

Any inquiry concerning this communication or earlier  
communications from the examiner should be directed to Kim CHU  
whose telephone number is (571) 272-7585 between 9:30 am to 6:00  
pm, Monday to Friday.

Kim-Kwok CHU

*W* 5/11/05  
Examiner AU2653  
May 11, 2005

(571) 272-7585

*William Korzuch*  
WILLIAM KORZUCH  
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